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I hereby certify that this paper and every paper referred to therein as being enclosed is being deposited with the U.S. Postal Service as first class mail, postage prepaid, in an envelope addressed to: Commissioner of Patents & Trademarks, Washington, DC 20231,

on July 16, 1993 (Date of Deposit)

Date

Name

9/16/93 J Karaszi



RECEIVED  
JUL 28 93  
GROUP 330  
PATENT  
2954/06403

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: MICHAEL BIRSHA DAVIES ET AL.

Serial No.: 07/633,145

Group Art Unit: 3307

Filed: March 1, 1991

Examiner: A. Lewis

For: INHALATION DEVICE

-----  
Date: July 16, 1993

CERTIFICATION UNDER 37 C.F.R. §1.97

Hon. Commissioner of  
Patents and Trademarks  
Washington, DC 20231

Sir:

PAUL FIELDS hereby declares:

1. I am the attorney representing the client in the above application.

2. A Notice of Non-compliance of Information Disclosure Statement with provisions of 35 CFR 1.97 was mailed on June 21, 1993.

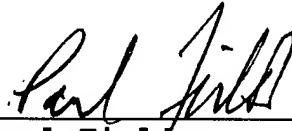
3. Accompanying this Certification is a Letter which explains that a certification of timely filing is found on page 2 of the Supplemental Information Disclosure Statement which was filed on February 22, 1993. Accompanying that letter are the cited references (listed on the enclosed Form PTO-1449) and a photocopy of the postcard evidencing their timely receipt as well as that of the foreign Patent Office actions which cited those references.

4. Each item of information contained in the Supplemental Information Disclosure Statement filed February 22, 1993 was cited in a communication from a foreign patent office in a counterpart foreign application received not more than three months prior to the filing of the statement.

5. During prosecution of a corresponding Taiwanese application, an Office Action dated December 21, 1992 (copy enclosed) issued that cited Taiwanese publication no. 29202, filed 24 May 1976. As is evident from the date stamp on the Office Action, the Taiwanese associates Lee and Li received the Office Action in their offices on December 22, 1993. During prosecution of a corresponding USSR (now Russia) application, an Office Action dated November 23, 1992 issued that cited French Patent No. 2238505. During prosecution of a corresponding New Zealand application, an Office Action dated January 8, 1993 issued that cited U.S. patent no. 3,482,733. Each of these references were submitted with the Supplemental Information Disclosure Statement that was filed February 22, 1993.

6. It is requested that the Notice of Non-compliance of information disclosure statement with provisions of 37 CFR 1.97 (paper no. 17) be withdrawn and that said information cited on the enclosed Form PTO-1449 be considered and made a part of the record of this application.

Respectfully submitted,



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Paul Fields  
Registration No. 20,298  
Attorney for Applicant(s)

DARBY & DARBY  
805 Third Avenue  
New York, NY 10022  
(212) 527-7700

Enclosure(s): LETTER  
3 Cited References  
Copy of return postcard

①

經濟部中央標準局專利再審查案核駁理由先行通知

中華民國八拾壹年四月廿四日

61.5.11/61.1.16

受文者：森園集團有限公司。

代理人：陳長文 先生

地址：（台北市敦化北路二〇一號七樓）

（台專（註）05040字第

號

主旨：第八一一〇〇二二三號專利再審查案經審查後發現尚有如說明欄所述不明確之處，台端（貴公司）若

有具體反證資料或說明，請於文到次日起六十日內提出中復說明及有關反證資料一式二份（本案如有修

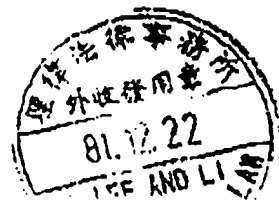
正應繳修正規費新台幣三百元正），若希望來局當面示範或說明，請于中復說明書內註明「要求面詢」

，本局認為有必要時，另安排地點、時間舉辦「面詢」（本局不另收取任何費用）。若期限內不提出中

復資料，不得要求延期，本局依現有資料進行審定，以免本局案件積壓太多。

說明：如後附理由

144151



置之凹入基片，且基片與蓋片可相互密閉或剝離分開成可充填粉末狀藥劑的多數容納部均為創新之一新發明，惟經查在我國已公告編號第三九三〇二號「包藥紙夾板」（如附件）早已揭露利用上下可密合或剝開之夾板片形成一長帶狀藥粉包束技術，且具複數沿縱長分隔開之圓穴凹入方式裝填藥劑，故本案實非技術原理或方法之首先發明，而僅係針對原分割案第八〇一〇一六四六號「吸入裝置」特定結構所做的習知藥劑包束方式之特定形狀結構改良，實難謂達新發明之要件。

經濟部中央標準局

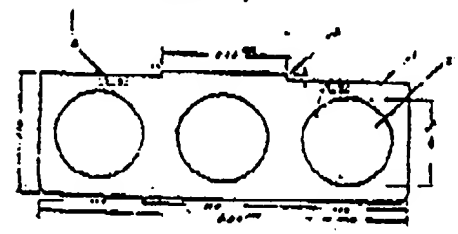
件

(51)  
Int. Cl.<sup>5</sup>  
A61J 01/00  
4  
72

# 29202 包藥紙夾板

A61J

- 一、申請案號數：六七二一七四〇號
- 二、創作之名稱：包藥紙夾板
- 三、創作人姓名：楊瑞武  
申請人姓名：楊瑞武
- 地址：臺北市嘉大路一三六號
- 四、申請之日期：六十七年五月廿四日
- 五、請求專利部份：
  1. 一種用以容納並固定「包藥紙」的兩片夾板裝置。
  2. 依據請求專利部份第一項之包藥紙夾板其特徵在於該裝置分上下兩板長度各為三張包藥紙合併的長度（或放張長度）寬各為一張包藥紙的寬度（或放張的寬度）上下兩板左右各設置一插銷連結以利轉開上板放置包藥紙於兩板之間。
  3. 依據請求專利部份第二項之上板其特徵在於每張包藥紙的中央位置各設有一圓穴如一面供藥物由此放進。
  4. 依據請求專利部份第二項之下板其特徵在於每張包藥紙的中央位置各設有一圓凹處如二面以利投藥其中不致散落。



84.8.25

# 中 國 專 利 聲 明 書

申請日期	67.5.20
編 號	67X70
分 類	461j

一發明(創作)之名稱:「藥包紙夾板」。

二發明(創作)之性質:發明☐ 新案☒ 新式樣☐

三請求專 利 年 限:十五年☐ 十年☒ 五年☐

四發明(創作)人姓名:楊 晴 次

住址:台北市萬大路 139 號

學歷:高職 現任台北市立忠西藥房負責人

經歷:台南市福民新藥廠股份有限公司醫務組組員

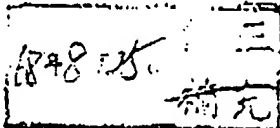
五申請人姓名:楊 晴 次

住址:台北市萬大路 139 號

六代理人姓名:

七發明(創作)之摘要說明:

在服藥無須配藥時，是將包藥紙隨便放於配藥台上，容易被風吹掉。本等察係針對此不利便之處，而以用上板(圖1)與下板(圖5)兩片的合板構中置入包藥紙，可將兩上板(圖1)所設之圓穴(圖2)內送一配藥，因此藥丸不走開，藥粉又不散落，且可防止包藥紙被風吹掉，台上不小心跌落藥水又可不會因此使包藥紙濕透等，配藥時並具有上述種種便利。



6721740

# 創作之名稱

包藥紙夾板

## 創作之摘要說明

以往藥劑師調配處方時是將「包藥紙」隨便置於調配台上，因無固定之裝置能固定「包藥紙」以致產生下列三點不方便之處。

- 1 包藥紙容易被風吹掉。
- 2 配藥時藥丸容易滾落地下。
- 3 調配台上如有灰塵或藥粉時容易沾污「包藥紙」。

因此，本考案係針對此三點缺點加以創製此「包藥紙夾板」。

## 創作之詳細說明

以任何可塑性物質製成之「包藥紙夾板」如（67年8月23日）所附之圖式

- 1 其上、下板如一、二圖之長度為 330mm，寬 110mm 左右各裝置一活鎖以連結上下板。
- 2 上板設有三個圓孔直徑各為 40mm。
- 3 下板板面上於上板之圓孔處下設有三個凹處直徑各為 40mm 深度為 2mm。
- 4 厚度為 3mm。

## 請求專利部份

- 1 一種用以容納並固定「包藥紙」之兩片夾板裝置。
- 2 依據請求專利部份第一項之包藥紙夾板其特徵在於該裝置分上下兩板長度各為三張包藥紙合併之長度（或欲裝長度）寬各為一張包藥紙之寬度（或欲裝之寬度）上下兩板左右各裝置一活鎖連結以利將兩上板放置包藥紙於兩板之間。
- 3 依據請求專利部份第二項之上板其特徵在於每張包藥紙的中央位置各設有一個圓孔加一圓供藥物由此放進。
- 4 依據請求專利部份第二項之下板其特徵在於每張包藥紙的中央位置各設有一個凹處加二圓以利使藥集中不致散落。



COMPLETE TRANSLATION OF THE CITATION

1. Publication No.: 29202
2. Application No.: 6721740
3. Applicant: Chyng-tsyh Yang
4. Filing Date: 24 May 1976
5. Title: Medicament Pack Sheet
6. Abstract:

In the past, when pharmacists dispensed medicines, they put the paper for packing medicines on the dispensary table. Since there is no suitable device to fix the paper the following shortcomings resulted:

1. The paper was easily blown away by wind.
2. The pills rolled down from the table while dispensing.
3. The paper pack was easily contaminated with dust or moisture on the table.

Accordingly, the subject creation is to provide a "Medicament Pack Sheet" to overcome the above shortcomings.

7. Detailed Description:

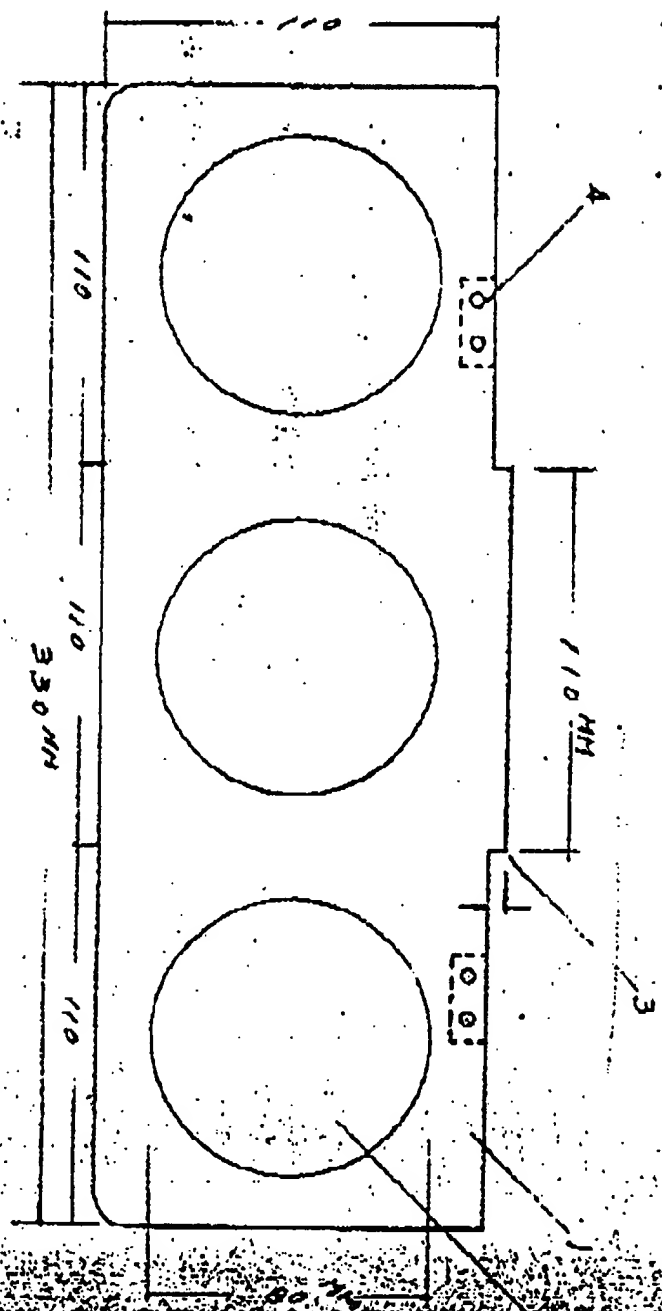
The medicament pack sheet can be made of any plastic materials.

1. As shown in Figs. 1 and 2, both the upper and lower sheets are 330 mm in length and 110 in width, and two hinges are mounted at the right and left sides between the two sheets.
2. The upper sheet is provided with three round holes of which diameter is 80 mm.
3. The lower sheet is provided with three concave portions, corresponding to the three holes of the upper sheet, which are 80 mm in diameter and 2 mm in depth.
4. The thickness is 3 mm.

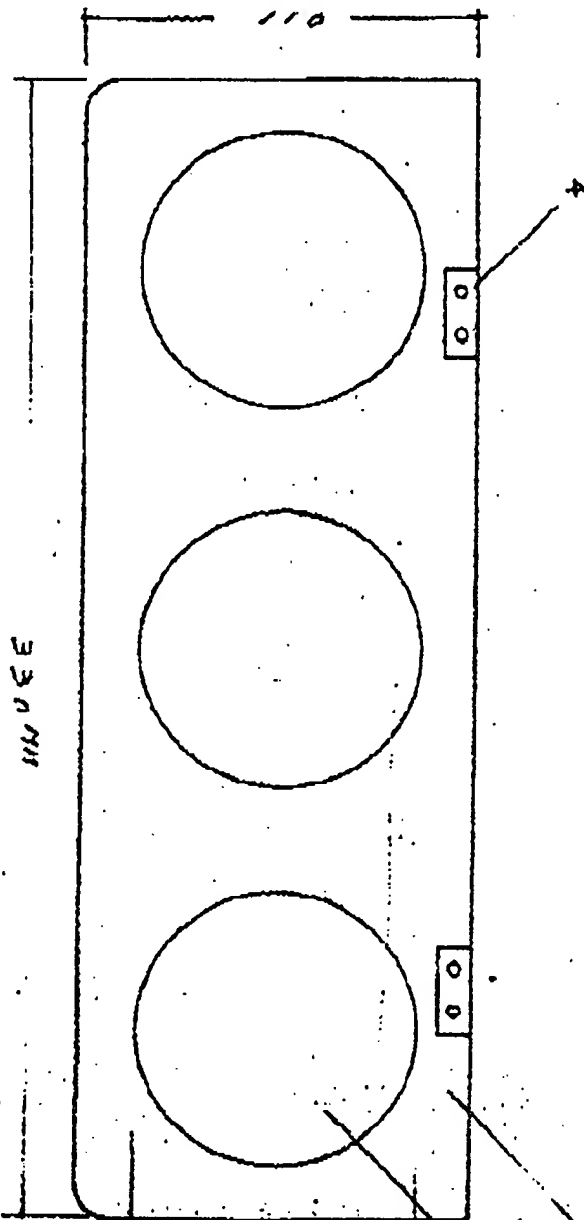
## 8. Claims:

1. A two-sheet device for receiving and fastening medicament packs.
2. The two-sheet device of Claim 1, characterized in that it is composed of an upper sheet and a lower sheet which are three times the length of the medicament packs, and is one times the width of the medicament packs, and that two hinges are mounted at the right and left sides between the upper sheet and the lower sheet such that the upper sheet can be opened for disposing the medicament packs.
3. The two-sheet device of Claim 2, characterized in that the central portion of the medicament packs in the upper sheet is provided with a round hole (as shown in Fig. 1) through which the medicament is disposed.
4. The two-sheet device of Claim 2, characterized in that the central portion of the medicament packs in the lower sheet is provided with a concave portion (as shown in Fig. 2) so that the disposed medicament would not spread out.

藥色紙夾板設計圖 A 1/2

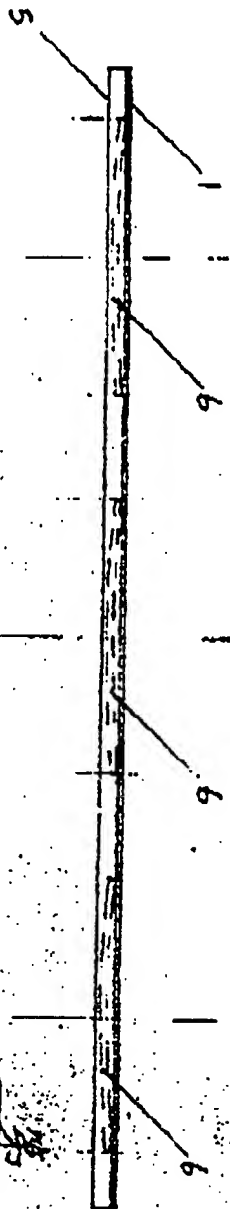


第一

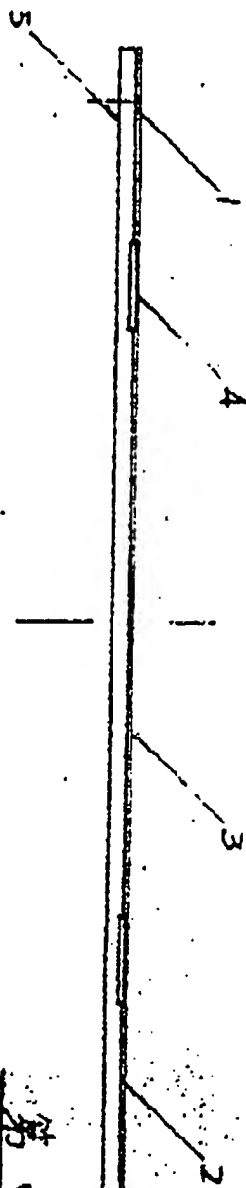


第二

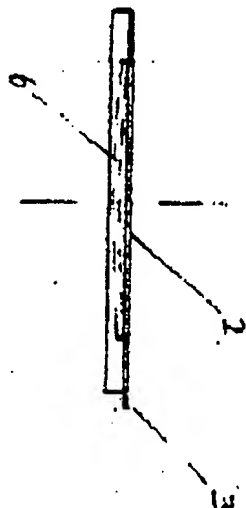
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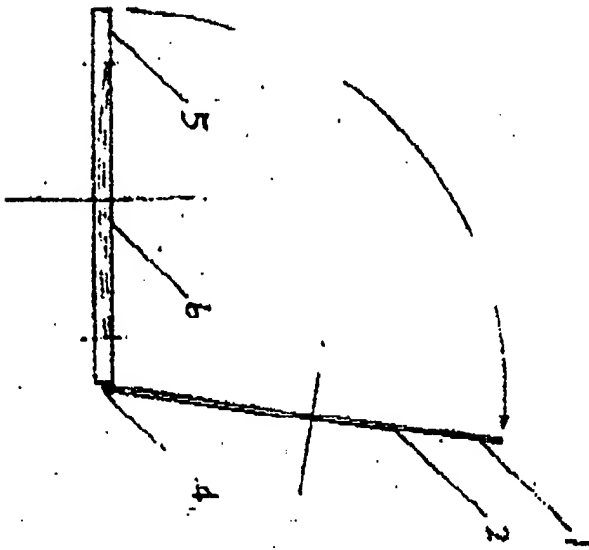
第三图



第四图



第五图



第六图

Форма № 10 ИЗ-91



РОССИЙСКОЕ ПАТЕНТНОЕ ВЕДОМСТВО

ВСЕСОЮЗНЫЙ

НАУЧНО-ИССЛЕДОВАТЕЛЬСКИЙ ИНСТИТУТ

ГОСУДАРСТВЕННОЙ ПАТЕНТНОЙ ЭКСПЕРТИЗЫ

ВНИИГПЭ

121838, Москва, Березовская наб., 30, корп. 1

Телефон 240-60-15 Телекс 114578 ПДЧ Факс 243-33-37

На № ~~4894695/14~~ 2412-103729/032 от 11.09.92

В ответе просим сослаться на номер заявки

№4894695/14(018094)

ЗАПРОС

патентной экспертизы:

23 1192

(21) по заявке №4894695/14(018094)

(22) дата поступления заявки 01.03.91

(85) Регистрационные данные заявки РСТ

(71) Заявитель(и) ГЛЭКСО ГРУП ЛИМИТЕД, СВ.

(51) МКМ А61М15/00

Для обеспечения возможности дальнейшего рассмотрения заявки экспертиза предлагает заявителю представить материалам, документы, сведения в связи с поставленными вопросами, мнение относительно приведенных в запросе доводов, замечаний, предложений.

Ответ на запрос должен быть представлен в 2-х месячный срок с даты его получения (пункт 2 статьи 12 Закона СССР "Об изобретениях в СССР"). По просьбе заявителя, поступившей до истечения этого срока, он может быть продлен при условии оплаты в установленном порядке.

В случае непоступления в установленный срок ответа на запрос или поступления ответа с нарушением этого срока

☒ заявка на изобретение считается отозванной.

☐ экспертиза будет проведена в соответствии с пунктом 2 статьи 14 Закона.

ВОПРОСЫ, ДОВОДЫ, ЗАМЕЧАНИЯ, ПРЕДЛОЖЕНИЯ

01

80

6/93 26.03.92 ДОТ 15.09.92

143901

-2-

Рассмотрев письмо ответ заявителя, экспертиза признала доводы заявителя убедительными и сочла возможным изложить п. I формулы изобретения в следующей редакции:

I. Ингалятор, содержащий корпус, в котором размещен лекарственный блок, имеющий по крайней мере один контейнер для лекарственного порошка, и средство для нарушения целостности контейнера в зоне выпускного отверстия корпуса, сообщенного с воздухопроводящим каналом, отличающийся тем, что лекарственный блок выполнен из двух, скрепленных друг с другом с возможностью разъединения частей, а средство для нарушения целостности контейнера содержит элемент для отсоединения частей лекарственного блока друг от друга.

Учитывая доводы заявителя в отношении признаков п. 7 формулы, экспертиза сочла возможным скорректировать признаки следующим образом:

п. 7 ... "с множеством выемок, образующих контейнеры для лекарственного порошка, расположенные вдоль пластины с фиксированным шагом ..." и далее по тексту.

Экспертиза также предлагает п. 26 изложить <sup>как п. 21</sup> в следующей редакции:  
п. II Лекарственный блок по п. 7-10, отличающийся тем, что герметичное соединение выполнено по всей ширине основной и покрывной пластин.

Учитывая согласие заявителя с прототипом экспертизы, обсуждение дополнительных источников информации нецелесообразно, причем один из указанных в решении от 26.03.92 следует читать: заявка Франции №2236505.

Вопрос о необходимости уточнения описания будет решен дополнительно.

В соответствии с изложенным заявителю предлагается в двухмесячный срок представить свое мнение по поводу уточненной формулы изобретения в настоящем решении, а также формулировку дополнительных пунктов формулы, относящихся к объекту - "Ингалятор".

Зам. зав. отделом медицины  
и медицинской техники НИИПТ



Т. Д. Афанасьева



Translation of Russian official letter dated 23.11.92  
re Application 4894695/14

Term for reply: 2 months

After examining the applicant's letter of reply, the examiner has been convinced by the applicant's arguments and is prepared to word claim 1 as follows:

1. An inhaler containing a body in which a medicinal unit is disposed, the inhaler comprising at least one container for medicinal powder and means for broaching the container near the outlet aperture of the body, which communicates with an air-conveying duct, characterised in that the medicinal unit is made up of two fastened-together separable parts, and the means for broaching the container contains an element for separating the parts of the medicinal unit.

After noting the applicant's arguments regarding the features in claim 7, the Examiner is prepared to correct the features as follows:

Claim 7... "with a number of recesses forming containers for medicinal powder and disposed along a plate with a fixing step/pitch/spacing..." (continue original text).

The Examiner also proposes that claim 26, like claim 11, should be worded as follows:

Claim 11. A medicinal unit as per claims 7 - 10, characterised in that the hermetic connection is made

- 2 -

across the entire width of the main and the covering plate.

Since the applicant agrees with the prototype, it is desirable to discuss additional sources of information. One of those cited in the decision dated 26.3.92 should be considered, i.e. French application No. 2 238 505.

The question about the need to revise the description will be decided additionally.

The applicant is therefore invited, within a period of 2 months, to submit his comments on the claims as revised in the present official letter, and also to formulate additional claims relating to an "Inhaler".

Acting Head of Medical  
and Medical Technology Department NIIGPE

(Signed)  
T D Afanas'eva

SECRET  
DE LA PROPRIÉTÉ INDUSTRIELLE

PARIS

DEMANDE  
DE BREVET D'INVENTION  
N° 74 25302

(1) N° de publication  
Lettres qui ont été  
composées de l'original

(2) Inventeur pour l'administration d'un médicament en poudre

(3) Classification internationale (In. O.P.) A 61 M 15/00

(4) Date de dépôt 21 juillet 1974, à 13 h 34 mn

(5) Priorité revendiquée : Demande de brevet déposée en Grande-Bretagne le 23 juillet 1973  
n. 25.003.7973 aux noms de Anthony Daniels, Norman Leonard Reed et au nom  
de la demanderesse.

(6) Date de la mise à la disposition de  
public de la demande A.O.P.I. - «Limes» n. 8 du 21.7.1974

(7) Déposé par : Société dite : BESPAC INDUSTRIES LIMITED, résident en Grande-Bretagne.

(8) Invention de :

(9) Traduite : (1)

(10) Mandataire : Cabinet J. Bonnet-Thivon, L. Rodde & G. Fodda.

Vente aux enchères à l'INSTITUT DE L'INDUSTRIE 21, rue de la Concorde - 75732 PARIS CEDEX 15

RECAPITULATIF

1. Inhalateur pour médicament en poudre comprenant un boîtier qui présente une chambre destinée à recevoir une capsule contenant une dose de médicament à administrer, un conduit, muni d'un bouchon, dont une extrémité est mise à l'atmosphère et dont l'autre extrémité débouche dans une pièce buccale à insérer dans la bouche de l'utilisateur, un passage reliant la chambre au conduit, un moyen de pompage manuel pour l'air comprimé dans la chambre, un détendeur d'écoulement posé dans ce conduit, une vanne empêchant l'air comprimé et le médicament d'entrer dans le conduit et un moyen permettant cette vanne pour laisser l'air et le médicament pénétrer dans le conduit quand le détenteur d'écoulement débloque que l'utilisateur aspire à travers le conduit, caractérisé en ce que la vanne est située entre le moyen de pompage et la chambre et en ce que la capsule et la chambre sont la disposition et les dimensions voulues pour que tout l'air envoyé par le moyen de pompage traverse la capsule quand la vanne s'ouvre.
2. Inhalateur selon la revendication 1, caractérisé en ce que le détendeur d'écoulement comprend une pale mobile montée dans le conduit.
3. Inhalateur selon la revendication 2, caractérisé en ce que la pale est articulée et la vanne montée sur un levier solidaire de la pale.
4. Inhalateur selon la revendication 3, caractérisé en ce que la pale est articulée autour d'une articulation située entre le levier et le conduit et voisine de la vanne.
5. Inhalateur selon l'une quelconque des revendications précédentes, caractérisé en ce que la vanne est sollicitée par ressort vers sa position de fermeture.
6. Inhalateur selon l'une quelconque des revendications précédentes, caractérisé en ce que le boîtier est agencé pour recevoir une capsule scellée contenant le médicament et en ce que des moyens sont prévus pour perforer les extrémités de la capsule.
7. Inhalateur selon la revendication 6, caractérisé en ce qu'un doigt, commandé par un curseur monté à l'extérieur du boîtier, est prévu pour porter une des extrémités de la capsule.
8. Inhalateur selon la revendication 7, caractérisé en ce qu'un couvercle est prévu pour fermer la pièce buccale en période de non utilisation, ce couvercle étant aussi intégralement d'un doigt destiné à pincer l'autre extrémité de la capsule.

La présente invention concerne un inhalateur pour l'administration d'un médicament en poudre, notamment du genre destiné à soulager des troubles respiratoires tels qu'asthme.

On connaît de tels dispositifs ; par exemple, le brevet britannique n° 898 549 (Benger Laboratories Ltd) décrit un dispositif dans lequel un médicament en poudre est introduit dans un courant d'air comprimé, une vanne s'ouvre pour laisser le courant d'air chargé de médicament sortir du dispositif quand l'utilisateur aspire à travers une pièce buccale.

La présente invention a pour but de proposer un dispositif perfectionné de ce genre.

Elle a pour objet un inhalateur pour médicament en poudre comprenant un boîtier qui présente une chambre destinée à recevoir une capsule contenant une dose de médicament à administrer, à l'atmosphère et dans le boîtier, dont une extrémité est mise à l'atmosphère et dont l'autre extrémité débouche dans une pièce buccale à insérer dans la bouche de l'utilisateur, un passage reliant la chambre en conduit, un moyen de pompage manuel pour l'envoi d'air comprimé dans la chambre, un détecteur d'écoulement positif d'air comprimé dans le conduit et un moyen manœuvrant cette vanne pour laisser l'air et le médicament pénétrer dans le conduit quand le détecteur d'écoulement décelé que l'utilisateur aspire à travers le conduit, caractérisé en ce que la vanne est située entre le moyen de pompage et la chambre et en ce que la capsule et la chambre ont la disposition et les dimensions voulues pour que tout l'air envoyé par le moyen de pompage traverse la capsule quand la vanne s'ouvre.

Un avantage de cet agencement est qu'une très forte proportion du médicament contenu dans la capsule est administrée à l'utilisateur pendant une seule manœuvre du dispositif.

Selon un mode de réalisation préféré, le détecteur d'écoulement comprend une pale articulée dans le conduit et la vanne est actionnée par un levier solidaire de la pale.

Dans ce cas, la pale peut pivoter autour d'une articulation située entre le levier et le conduit et qui peut être voisine de la vanne.

La vanne peut être actionnée par ressort vers sa position de fermeture.

Un avantage de cet agencement préféré est que l'utilisateur

reçoit la dose de médicament au stade voulu de son temps d'inhalation, ce qui assure le mieux d'efficacité en rendant l'usage.

De préférence, la chambre est agencée pour recevoir une capsule scellée contenant le médicament et peut emporter des moyens propres à perforer les extrémités de la capsule.

On peut prévoir un collet amovible par curseur pour varier une extrémité de la capsule.

La pièce buccale peut être garnie d'un couvercle et le couvercle muni d'un moyen permettant de perforer l'autre extrémité de la capsule.

On va maintenant décrire à titre d'exemple une réalisation d'inhalateur selon l'invention en se référant aux dessins annexés, sur lesquels :

la figure 1 est une vue en coupe verticale de l'inhalateur ;  
la figure 2 en est une vue en coupe horizontale suivant la ligne 2-2 de la figure 1, et

la figure 3 en est une vue en plan.

L'inhalateur comprend un boîtier 10 dans lequel est formé un cylindre 11. Un soufflet 12 est monté dans le cylindre 11 et une soupape de retenue 13 est montée dans la paroi du cylindre 11 pour permettre la pénétration d'air dans le soufflet.

A l'extrémité inférieure du cylindre 11, un taquet 14 présente un logement de réception d'une extrémité d'une capsule 15 contenant le médicament en poudre à administrer. La capsule est maintenue en place par un organe de retenue 16, qui présente un logement complémentaire et est fixée par des bras rayonnants 15 à une pièce buccale 17, à visser sur le boîtier.

De l'air s'écoule du cylindre 11 vers la capsule 15 par un passage 18 ménagé dans le taquet, puis traverse un passage d'admission 19, auquel s'ajoute dans le taquet. Une vanne 20 est prévue pour intercepter l'extrémité inférieure du passage 18 d'une manière qu'on exposera.

Pour perforer les extrémités de la capsule 15, on prévoit deux aiguilles 21 et 22. L'aiguille 21 est solidaire du couvercle 23 de la pièce buccale et pénétre dans la capsule par un passage de sortie 24 reliant la capsule à la pièce buccale. L'aiguille 22 est montée sur un bouton 25 porté par un bras d'accouplement 27 qui traverse une fente 28 du boîtier et est solidarisée d'un curseur 29. On peut déplacer le curseur 29 le long du côté du boîtier 40 pour enfoncer le bouton 25 à l'ouverture d'un ressort 26 en vue de

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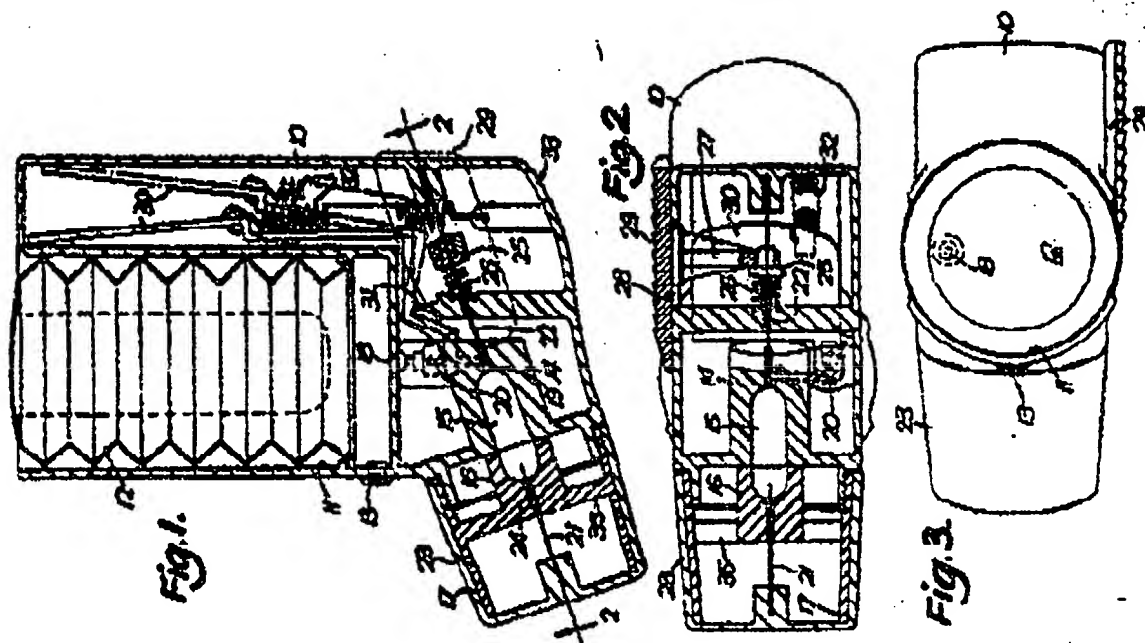
perforer la capsule.

La vanne 20 est montée sur une extrémité d'une pale 30, articulée autour d'un point d'appui 31. Un ressort 32 la sollicite vers sa position d'intersection du passage 18 (la figure 1 représente la vanne, en trait plein, dans sa position d'ouverture et, en traits interrompus, dans sa position de fermeture).

La vanne 20 est interposée sur un conduit d'air dont l'entrée est située en 33 sur la figure 1 et qui débouche, à travers des trous percés dans l'organe de retenue 16, dans la pièce bascule.

Pour utiliser l'inhalateur, on commence par mettre une capsule 15 en place, et l'on perce ses deux extrémités, à l'aide de l'aiguille 21, puis de l'aiguille 22. On retire ensuite le couvercle 23. On presse ensuite le cordon du soufflet 12 pour constituer une réserve d'air comprimé, la vanne 20 étant fermée sous l'action du ressort 32. Quand l'utilisateur aspire de l'air à travers la pièce buccale 17, l'air qui s'écoule dans le conduit de la région 33 vers la pièce buccale amène la pale 30 dans la position représentée en trait plein sur la figure 1, dans laquelle elle laisse l'air comprimé traverser la capsule 15 et ressortir dans la pièce buccale, entraînant le médicament contenu dans la capsule. Ainsi, la dose de médicament est entièrement prise dans la capsule et inhalée par l'utilisateur. Le médicament est typiquement inhalé à raison de 91 % de la dose contenue dans la capsule.

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8 January 1993

Baldwin, Son & Carey  
DX 8134  
WELLINGTON

Dear Sirs

Patent Application No. 237274  
GLAXO GROUP LTD  
Your ref: BM666891

The matters raised in this letter should be dealt with as promptly as possible. The time prescribed by s.19 of the Patents Act 1953 for complying with all the requirements in connection with this application has been extended under the provisions of s.93(1) to 8 April 1994.

The Examiner, Natalie Gray, reports:

1. In order to comply with Section 10(4) the following matters appear to require attention:
  - (a) It appears that the device of claim 1 should be defined in its own right, without reference to the medicament pack, which is not included in the claim. Alternatively, the claim should be directed toward the combination of the device and the pack.
  - (b) In claims 2.3 and 4 the words "adapted for use" (line 1 in each case) should be deleted to clarify the claims. Furthermore the reference in these claims to the medicament pack do not further define the device being claimed. The claims therefore require amendment so that they only describe features of the device itself. Alternatively these claims may be directed toward a combination of the device and the medicament pack being described.
  - (b) In claim 7, line 1, for "as" read "when".

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237274 contd/...

- (c) In claim 21 the words "movable by a given step being carried out to display the legend relating to the next step" appear to require clarification.
  - (d) The claims appear to relate to different inventions with claims 1 to 21, 27 and 28 relating to an inhalation device and claims 22 to 26 and 29 relating to a medicament pack. It is noted that one of these inventions may form the subject matter of a separate, divisional application.
  - (e) In claim 27 the reference to different combinations of figures should be replaced by a reference to "any one of Figures 1 to 34 of the accompanying drawings". This amendment would make claim 28 redundant on claim 27 so that claim 28 could be deleted.
  - (f) In claim 29 the words "of the accompanying drawings" should be added to the end of the claim.
2. As a result of investigation under Section 13 it appears that the invention, as claimed in at least claim 22, has been prior published in United States Patent Specification 3482733 available on microfilm from 14 November 1984.

Yours faithfully

H BURTON  
Commissioner of Patents

Per: 

14 NOV 1984

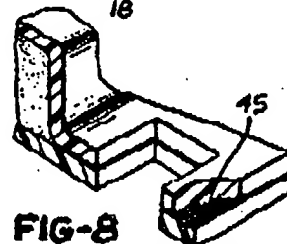
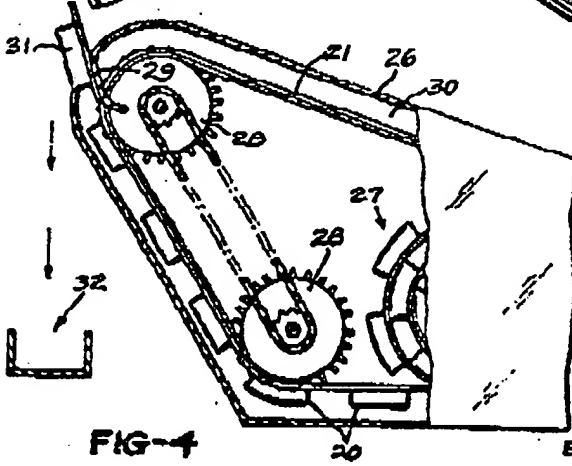
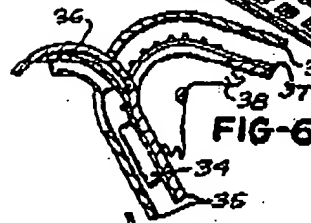
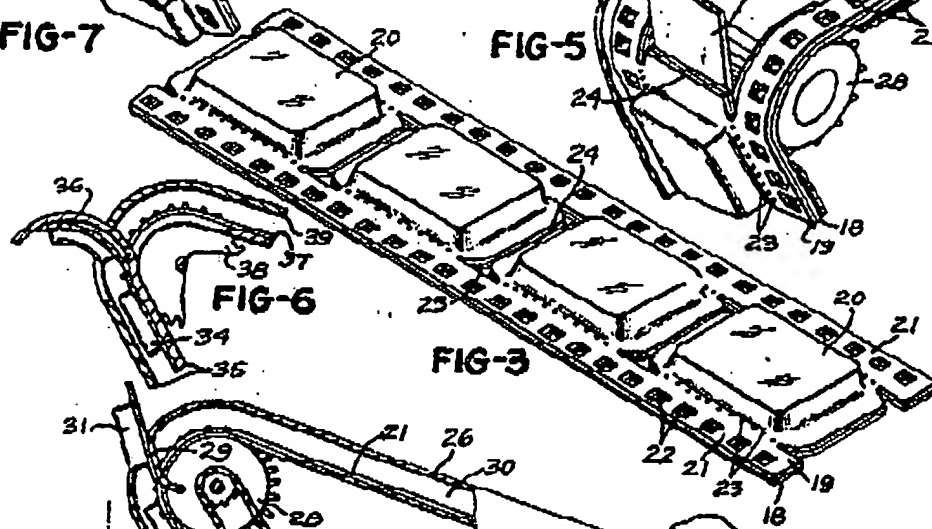
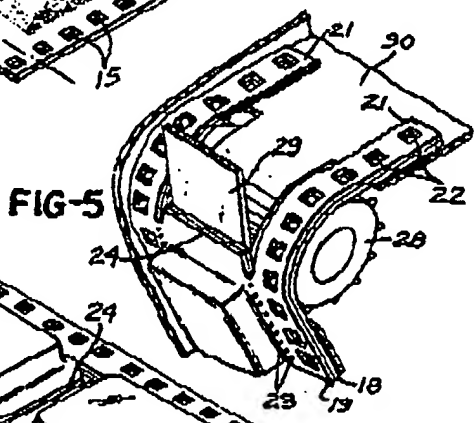
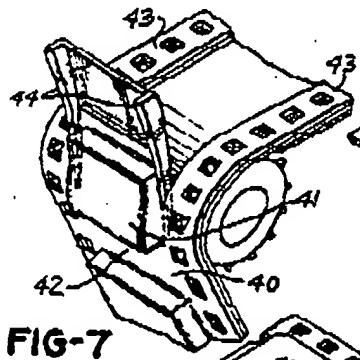
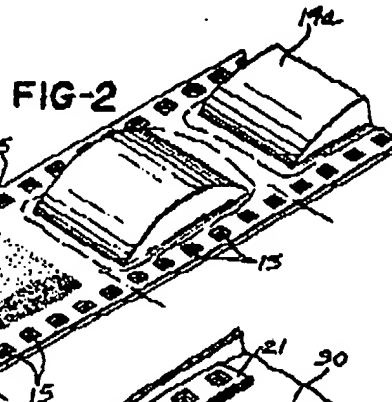
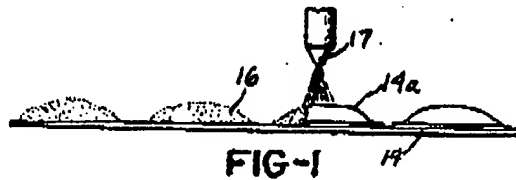
Dec. 9, 1969

R. C. GROVES

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STRIP PACKAGE

Filed Oct. 1, 1965



INVENTOR,  
ROBERT C. GROVES  
BY *William A. Galt*



# United States Patent Office

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Patented Dec. 9, 1969

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**STRIP PACKAGE**

Robert C. Groves, 1890 Southwood Lane W.,

Dayton, Ohio

Filed Oct. 1, 1965, Ser. No. 492,130

Int. Cl. B65d 83/06; C67H 11/66

U.S. Cl. 221-38

6 Claims

**ABSTRACT OF THE DISCLOSURE**

A flexible carrier strip and a cover strip are sealed together to define longitudinally spaced hermetically sealed compartments, and the edge portions of the strips have longitudinally spaced feed holes for engaging a pin drive. Longitudinally spaced perforations extend within the edge portions between the compartments and the feed holes, and incisions extend laterally between the compartments from one line of perforations to the other and cooperate with the perforations to define longitudinally spaced pockets each having a hermetically sealed compartment. The packets are successively separated from the edge portions of the strips by pulling the edge portions past a member extending between the edge portions.

This invention relates to packaging of articles and materials and the handling and feeding thereof, and to the packaging and handling of materials in such a manner as to facilitate the delivery thereof to a selected point in predetermined quantities.

The packaging and dispensing of materials and articles either in automatic machines, such as washing machines or the like, or in coin-operated dispensers, has become an endeavor of substantial size, and a great many articles and materials are now automatically dispensed in measured quantities.

It is in particular connection with the packaging of articles and materials that the present invention is concerned.

A primary object of this invention is an improved method of packaging articles and materials such that the handling thereof is more convenient and accurately defined than has heretofore been the case.

Another object of this invention is the provision of an improved package for articles and materials which readily adapts itself to the conveying of materials in automatic packaging devices, coin-operated mechanisms, and the like.

Still another object of this invention is the provision of a novel package arrangement for articles or materials in which the articles or materials are at all times completely protected against certain external influences until it is desired to utilize said articles or materials.

Still another object of this invention is the provision of an improved packaging arrangement in which the conveying or indexing of the articles or packaged material can be made extremely precise, but, at the same time, quite convenient.

It is the particular object of this invention to provide a method of strip packaging and a strip package for individual articles and bulk materials which is greatly improved over previous packaging methods and packages.

It is still another object of this invention to provide a strip package for individual articles or bulk material in which each article or each unit quantity of the material is individually and totally enclosed and which strip includes an arrangement for the precise conveying thereof to determine exactly the number of articles or the quantity of material carried by the strip package that is conveyed in any given cycle.

The foregoing objects and advantages of the present

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invention will become more apparent upon reference to the following specification taken in connection with the accompanying drawings, wherein:

FIGURE 1 is a rather diagrammatic view showing the formation of a packaging arrangement according to my invention;

FIGURE 2 is a perspective view of the strip package of FIGURE 1;

FIGURE 3 is a perspective view of still another strip package according to my invention;

FIGURE 4 is a vertical sectional view showing rather diagrammatically an arrangement for handling the strip package of FIGURE 3;

FIGURE 5 is a perspective view showing a portion of the mechanism of FIGURE 4 and showing in particular the mechanism by which the individual packages are separated from the edges of the strip package;

FIGURE 6 is a view similar to FIGURE 4 but illustrating a somewhat modified arrangement for discharging the package as it is removed from the carrier strip;

FIGURE 7 is a perspective view similar to FIGURE 5 but showing how cutting blades could be employed for cutting the individual packages from the carrier strip instead of tearing them therefrom; and

FIGURE 8 is a fragmentary sectional view through the carrier strip.

**GENERAL ARRANGEMENT**

In general, the several objects of the present invention are attained by distributing individual articles or bulk material along a strip which may be referred to as a carrier strip and hermetically sealing the individual articles to the strip or hermetically sealing the bulk material in discrete quantities to the strip, the said articles or the said discrete quantities of material being in uniformly distributed relation along the carrier strip.

The carrier strip embodies feed holes uniformly distributed along one or both edges thereof which are employed for feeding the carrier strip and, therefore, advancing the articles or material thereon. The feed holes bear a predetermined relation to the distribution of the articles or material on the carrier strip and the number of articles or the number of discrete quantities of material on the carrier strip conveyed by a predetermined movement of a driving member engaging the drive holes can thus be determined precisely.

The carrier strip embodies feed holes uniformly distributed along one or both edges thereof which are employed for accurately indexing the position of the carrier strip and, therefore, advancing the articles or material thereon in a timed relationship with said feed holes. The feed holes bear a predetermined lineal and incremental ratio to the distribution of the conveyed materials and the carrier strip proper and the number of articles, materials, or the number of discrete quantities of materials thus conveyingly conveyed by the carrier strip fed by an accurately predetermined movement of a driving mechanism engaging the drive holes can thus be precisely determined.

In one form of the invention, the articles or materials are carried on a carrier strip in uniformly distributed relation and a covering strip is applied thereto and sealed to the carrier strip about the articles or discrete quantities of material carried thereon.

In another modification, the two strips, namely the carrier strip and the cover strip, are substantially identical and are pre-formed so as to have pockets therein so as to retain the articles or quantities of material therein when the carrier strip and cover strip are brought together and sealed about the pre-formed pockets therein.

In still another modification, the articles are distributed along the carrier strip, or the materials to be carried there-

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by are formed into discrete quantities therealong or are placed on the strip in pelletized form and the cover strip is applied thereto in the form of a wet film as by spraying so that, when the film dries, or is dried, the materials will be hermetically sealed to the carrier strip.

In still another modification, the carrier strip and cover strip forming the hermetically sealed compartments for articles or material have feed holes formed along both edges, said edge portions being connected to the compartments along lines of separation. The individual compartments are separated from each other by lateral incisions extending between the lines of perforation so that, by tearing or cutting off the edge portions along the said lines of separation, the individual compartments will fall free of the strip.

### STRUCTURAL ARRANGEMENT

Referring to the drawings more in detail, FIGURES 1 and 2 illustrate an arrangement wherein there is a carrier strip 14 having associated therewith cover means 14a that defines with the carrier strip a plurality of individual compartments adapted for receiving individual articles or bulk material.

The individual compartments are sealed about their entire periphery by sealing the cover means, which may be a strip, to the carrier strip either by adhesive or by known heat sealing techniques. The particular manner in which this is accomplished will depend upon the particular material being employed. With the carrier strip and cover strip made of Pliofilm, for example, heat sealing of the strips together would produce hermetically sealed compartments. In other cases, utilizing a wax paper, for example, a heat sealing technique could also be employed whereas, with certain plastic materials, such as cellulose acetate, it would be preferable to employ an adhesive. Also, heat and water sealing of a water soluble film could be employed. Further, in some cases, the cover sheet could be stitched in place and sealing accomplished by this operation or by the use of adhesive or heat or by a solvent type cementing agent. The solvent type cementing agent could also be employed instead of adhesive in certain cases.

At least one marginal portion of the carrier and cover strip combination is sufficiently wide to receive therein in uniformly distributed relation feed holes which can be utilized to control the feeding and locating of the strip. A pin wheel or suitably constructed sprocket for example, could be connected with the feed holes to drive a strip package. The amount of rotation of such a driving member could, of course, be extremely closely controlled and thus, in turn, precisely control the conveying movement of the strip package.

In FIGURES 1 and 2, there is shown a carrier strip 14 having feed holes 15 along at least one edge thereof and with the carrier strip being adapted for receiving in uniformly spaced relation therealong articles or pellets 16 of material to be carried by the strip package. In this modification, the cover strip is applied in the form of a wet film as by spraying the cover material on the carrier strip from the nozzle 17.

FIGURE 4 illustrates ejection of the pouches or compartments as a continuous repetitive operation as opposed to an intermittent or sporadic delivery, and to a method of detaching or separating individual portion compartments or pouches from the remainder of the strip. This operation could be performed immediately upon completion of a packaging procedure and, further, provides that the films are pulled and not pushed thereby enabling operation at higher speeds and permitting lighter weight films to be processed by this method.

In FIGURES 3 and 4, there is the usual combination of a carrier strip 18 and a cover strip 19 sealed thereto so as to form individual hermetically sealed compartments 20. The strip package has relatively wide edge portions 21 in which are located the uniformly spaced feed holes

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22. The edge portions 21 are also provided with lines of perforations 23 which are formed in the sealed-together edge portions so as not to destroy the hermetically sealed condition of the individual compartments 20.

Extending laterally across the strip package between the individual compartments are the incisions 24 having somewhat enlarged end portions 25 that coincide with the lines of perforations. The provision of the incisions 24 with their enlarged end portions 25 reduces the area that must be sealed together and an economy in the sealing is thus effected. Furthermore, the lateral incisions make it simple to remove the individual packets from the strip package merely by tearing the edge portions 21 therefrom along the lines of perforation 23.

This can be done in a device such as is illustrated in FIGURES 4 and 5 wherein there is provided a housing 26 in which a strip package 27 according to FIGURE 3 is placed. This strip package is fed by the rotary pin wheels or feed members 28 upwardly in the housing and past a tear-off blade 29 which engages the back of the strip package in between the lines of perforation and tears the individual packets from the edge portions 21 of the strip package. The edge portions are fed on through a discharge chute 30 while the individual torn-off packets, one of which is indicated at 31 in FIGURE 4, drop outside the housing to a point of use 32, which may be a washing machine tub, or the like.

It is contemplated, particularly where the packets are to be delivered to a washing machine tub, to form the carrier strip and cover strip from a material which is water soluble and which may be beneficial to the washing bath. Polyvinyl alcohol, for example, is water soluble and a wetting agent, and can be formed into strips from which to form the strip package.

While polyvinyl alcohol is soluble in water and is also a wetting agent, other film materials could be employed which were merely water soluble and had no wetting agent properties and, in other cases, where the receiving bath was other than water, the film could suitably be a material which was soluble therein but not necessarily soluble in water.

It is also contemplated to employ the principles of the present invention in connection with the packaging of materials in individual packets, in which case the carrier strip having 1' feed holes along at least one edge, following the delivery of the materials to be packaged thereto and the sealing of the material into compartments, is passed through a mechanism similar to that shown in FIGURE 4, wherein the perforated portion of the carrier strip is removed therefrom. The carrier strip is either automatically separated into individual packets by this operation, or is thereafter cut apart between the individual packets, thereby producing a plurality of individual sealed packages containing the desired quantities of the packaged material. In an operation of this nature, it will be apparent that the feed holes along the edge or edges of the carrier strip provide the means for advancing the carrier strip at the proper rate of speed and for synchronizing the strip with the delivery of the material thereto and with the mechanism for covering the carrier strip into the individual packages referred to.

In the modification of FIGURE 7, the carrier strip 40 has the individual compartments 41 therein separated from each other by the lateral incisions 42, but there is no line of perforations between the individual compartments or packages and the perforated edge portions 43 of the carrier strip. Instead, the discharging mechanism includes cutting blades 44 that cut off the individual compartments in the manner illustrated so that they discharge from the carrier strip.

It is contemplated to move the carrier strip in the FIGURES 4 through 7 modifications at high speed and, with this in mind, it may be desirable to reinforce the edge portions, as indicated at 45 in FIGURE 8, by filaments, or the like, such as glass fibers, extending longi-

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radially along the said edge portions. This will serve to prevent the edge portions from breaking and will thus permit quick starting of the carrier strip and rapid movement thereof. This might be desirable in connection with high speed assembling operations where a plurality of different components were brought together by discharging the components from various stations disposed along a conveyor to a receiving station moving along the conveyor past the several discharge stations.

While the packages herein described constitute preferred embodiments of the invention, it is to be understood that the invention is not limited to these precise packages, and that changes may be made therein without departing from the scope and spirit of the invention.

What is claimed is:

1. A strip package comprising a carrier strip and a cover strip sealed therein and said strips defining therebetween hermetically sealed compartments spaced uniformly along the sealed together strips, said sealed together strips having marginal edge portions extending laterally outwardly from said compartments and having feed holes formed therein, lines of perforations extending along said edge portions between the said feed holes and the said compartments, and incisions extending laterally of the strip between the compartments from one line of perforations to the other whereby the individual compartments can be torn out from between the said edge portions, each of said incisions having an enlarged end portion at each end coinciding with the lines of perforations.

2. The combination of a strip package including a carrier strip and a cover strip sealed together to define longitudinally spaced hermetically sealed compartments, said sealed together strips having laterally projecting edge portions, lines of longitudinally spaced perforations within said edge portions adjacent said compartments, incisions extending laterally between the compartments from one said line of perforations to the other said line and cooperating with said perforations to define longitudinally spaced packets each having one of said compartments, strip advancing means for engaging said edge portions, and means extending between said lines of perforations for successively separating each said packet from said edge portions in response to advancement of said strips.

3. The combination as defined in claim 2 wherein said carrier strip and said cover strip comprise liquid soluble strips.

4. A strip package comprising a flexible carrier strip, cover means attached to said carrier strip and cooperating therewith to define a plurality of longitudinally spaced compartments and marginal edge portions projecting laterally outwardly from said compartments, means defining longitudinally extending lines of spaced perforations within said marginal edge portions on opposite sides of said compartments, incision means extending between adjacent said compartments only from one said line of per-

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forations to the other said line and arranged to define a longitudinally projecting generally U-shaped tab between said lines of perforations for each said compartment, and said incision means cooperating with said perforations to define a plurality of longitudinally spaced packets each having at least one compartment and one of said tabs to provide convenient and dependable separation of each said packet from said carrier strip in response to pulling said edge portions past a member extending between said edge portions.

5. A strip package adapted for use in an automatic dispenser, comprising a flexible carrier strip, a cover strip sealed to said carrier strip and cooperating therewith to define longitudinally spaced hermetically sealed compartments, said sealed together strips having marginal edge portions extending laterally outwardly from said compartments, means defining longitudinally spaced feed holes within said edge portions, means defining lines of longitudinally spaced perforations within said edge portions between each said compartment and said feed holes, means defining incisions extending laterally between said compartments only from one said line of perforations to the other said line, said incisions and said perforations cooperating to define longitudinally spaced packets each having at least one of said hermetically sealed compartments and with adjacent said packets being completely separated from one said line of perforations to the other said line by one of said incisions to effect separation of each said packet from said strip in response to pulling said edge portions past a member extending between said edge portions and without the use of cutting knives.

6. A strip package as defined in claim 5 wherein said carrier strip and said cover strip comprise liquid soluble strips.

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MARTHA L. RICE, Primary Examiner

U.S. Cl. X.R.

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